MSI is not required to make a showing of customer demand for its pending nodal station applications. Rather, paragraphs 6 and 7 of that *Freeze Order* are quite explicit in exempting the pending 174 build-out applications from any freeze or obligation to demonstrate customer demand. The *Freeze Order* reads as follows:

> [W]ith respect to existing licensees that hold authorizations to use a channel on an exclusive basis within a defined area, *we do not seek to take action that would freeze their ability to build-out pursuant to their pending applications. Rather, those pending applications for build-out of already authorized exclusive defined areas shall remain subject to regular Bureau processing,* including the current notice and comment period. As a result, we note that this administrative freeze affects only approximately 70 of the pending 248 applications.
>
> . . . . However, we would entertain applications for existing DEMS licensees for additional nodal sites within already authorized defined areas where these licensees demonstrate that granting of applications is necessary to meet customer demands for their DEMS services.[39]

Since the customer demand requirement clearly applies only to nodal station applications filed *after* imposition of the freeze, not to applications filed before that date, MSI's 174 applications should be promptly granted.

---

[39] *Freeze Order* at ¶ 6-7 (emphasis added).

4. Teledesic's Latest Study Regarding Frequency Coordination with 18 GHz FS Licensees Must be Viewed with Skepticism Because it Directly Contradicts Teledesic's Long-Standing Position That Frequency Coordination is Possible

In its August 30 study, Teledesic flatly claims for the first time that its proposed system cannot operate on a co-primary basis with 18 GHz FS licensees. On the contrary, Teledesic has authored documents relating to the U.S. preparation for WRC-97 clearly indicate that coordination at 18 GHz is feasible.[40] Only now, after the Commission's designation of 18 GHz as a NGSO/FSS downlink band, does Teledesic raise claims of incompatibility. This claim is based on a grossly inadequate engineering analysis. In fact, although only two weeks before filing its Petition Teledesic had claimed that it had "not been established" whether DEMS and NGSO/FSS operations could exist without causing interference,[41] it now claims that "sharing between NGSO/FSS earth stations and the newly proposed DEMS systems will be *impossible*."[42] Teledesic fails to explain what has changed since it filed its application in March 1994, since it

---

40 *See* Attachment 5, Teledesic Application at 79. *See* Documents USWP 4A/49 (Rev. 1), August 30, 1996 ("frequency sharing between satellites of a NGSO FSS network and FS stations appears to be feasible"). Document IWG-2C/17 (Rev. 2), July 24, 1996 ("[S]haring appears to be feasible in the downlink band based on system specific characteristics of the LEO SAT-1 non-GSO FSS network.").

41 *See* Letter dated August 23, 1996 from Scott Blake Harris to Michelle Farquhar, at 2.

42 Petition at 14.

participated in the proceedings leading to the *28 GHz Order* and WRC-95 in 1995 and early 1996, during its ongoing preparation for WRC-97, or even in the two weeks preceding its Petition, to make coordination "impossible."

MSI and DSC continue to believe that NGSO/FSS and DEMS systems can be operated on a co-primary basis. As set forth above and in MSI's and DSC's earlier filings, there is nothing "newly proposed" at all regarding MSI's applications for additional nodal sites. Rather, the proposed facilities simply reflect the anticipated build-out of earlier-licensed DEMS systems under the DEMS rules. Indeed, Teledesic takes great lengths to assert that the DEMS rules contemplate point-to-multipoint systems rather than systems deploying point-to-point microwave equipment.[43] Although MSI and DSC correct this mischaracterization of the DEMS rules below, Teledesic's argument demonstrates that it has always known -- or at the very least should have known -- that there would be point-to-multipoint systems constructed and operating in the 18 GHz band and that it would have to coordinate with these users.[44] For Teledesic now to claim that its system is incompatible with such systems and to perform interference analyses based on technical parameters that significantly differ from those

---

43 *Id.* at 16-17.

44 In addition, Teledesic had been in communication with DSC regarding DEMS systems at least as early as June 1995. *See* Attachment 3.

proposed in its application constitutes a major modification to *its own* application.[45]

In any event, Teledesic's recent statements that it is unable to coordinate with fixed service systems are diametrically opposed to the position it has taken with respect to ITU proceedings over the past two years. Both prior to and during WRC-95, Teledesic insisted that its system would be compatible with FS systems operating in the 18.8-19.3 GHz and never did it make any distinction between point-to-point and point-to-multipoint systems in this band.

For instance, in a paper *produced by Teledesic for use by the U.S. delegation at WRC-95*, the conclusion is made that an NGSO/FSS network can successfully share spectrum with FS systems. The Information Paper discusses the characteristics of the Teledesic system and its ability to share with other services allocated to the bands sought for NGSO/FSS designation. This paper states:

> This paper presents tabular and statistical results that are useful in evaluating the potential for frequency sharing between FS stations and non-GSO FSS networks. The results indicate feasibility for sharing

---

[45] Apparently not content with presenting its revisionist history directly to the Commission, Teledesic has attempted also to try its case in the trade press by characterizing MSI and DSC as "secretly working on a new service." *See, e.g.*, "Terrestrial Satellite Interests Clash over Possible Interference," *Wireless News* (Sept. 5, 1996), at 1, 3. Teledesic's own prior public statement demonstrate the patent falsity of such allegations.

between the two services in the downlink band. Further studies are required to determine optimum FS sharing scenarios in both uplink and downlink bands.[46]

With strong backing of the United States at WRC-95, Teledesic was able to obtain the international designation of 400 MHz out of the 500 MHz it sought. At WRC-97 it seeks to achieve the same designation for the additional 100 MHz from 18.8 - 18.9 GHz. Within the WRC-97 preparatory process Teledesic continues to assert that sharing between NGSO/FSS and FS is possible.[47] Teledesic has submitted proposed text for the report of Informal Working Group 2C (which addresses 20/30 GHz band issues) that concludes that "sharing appears to be feasible in the downlink band based on system specific characteristics of the LEO SAT-1 non-GSO FSS network."[48] At no point does Teledesic refer to any difficulty in coordination with DEMS or other 18 GHz FS users.

---

46 Document 84-E, October 26, 1995, (submitted to WRC-95 by the United States of America), at 16.

47 Because the U.S. WRC preparatory process is carried out by the Commission through a formal Industry Advisory Committee, statements made in this forum are made to the Commission.

48 Document IWG-2C/17 (Rev. 2), July 24, 1996. This paper is meant to be a section of the report to the FCC from IWG-2C -- the Industry Working Group addressing Ka-band matters. It provides support for the feasibility of sharing between NGSO/FSS earth stations and FS stations and addresses the need for the designation of an additional 100 MHz of spectrum for NGSO/FSS at WRC-97. *Id.* § 3.1.1

Similarly, Document USWP 4A-49 (Rev. 1), authored by Teledesic and dated August 30, 1996 -- *the exact same date as the interference analysis submitted along with its Petition* -- purports to discuss the results of sharing studies between NGSO/FSS and other services as requested by WRC-95. In Section 4.4.1.2, the paper states:

> Frequency sharing between satellites of a NGSO FSS network and FS stations appears to be feasible. The coordination distances between FS stations and NGSO FSS earth stations are comparable to the coordination distances between FS stations and GSO FSS earth stations.[49]

Clearly, the positions taken in these Teledesic-authored papers supporting international designation of an additional 100 MHz for NGSO/FSS are inconsistent with Teledesic's representations in its recent freeze request and in its Petition. The Commission cannot deny pending DEMS applications or reconsider the earlier grant of existing DEMS licenses based on the sharing studies submitted by Teledesic because these studies are contradicted by sharing studies submitted by Teledesic in other fora.[50]

---

[49] Doc. USWP 4A/49 (Rev. 1), August 30, 1996 (emphasis added). This paper was subsequently revised in the ITU-R National Committee review process due to opposition from various parties who pointed out the same inconsistency between Teledesic's international and domestic sharing claims.

[50] *See also* Attachment 6, Letter dated August 28, 1996 from Antoinette Cook Bush and Jeffrey H. Olson to Michele Farquhar, Chief, Wireless Telecommunications Bureau, at 5-6.

5. The Pending 174 Applications Would Cause No Harmful Interference To Existing or Proposed NGSO/FSS Stations.

As detailed above, MSI's pending applications to build out its already licensed DEMS systems are subject to frequency coordination procedures only with other licensees, applicants, or users for 18 GHz FS or earth station facilities.[51] Teledesic had explicitly supported the Commission's proposal to designate the 18.8-19.3 MHz band for its downlink operations in the *28 GHz Order* proceeding and failed to raise *any* concern regarding its ability to coordinate with *18 GHz* FS users.[52] Accordingly, the Commission recently reiterated these coordination procedures in its *28 GHz Order*.[53] Therefore, Teledesic's allegations of interference to hypothetical earth stations that are not planned to be built for several years, if at all, do not warrant a delay in granting MSI's additional nodal station applications.[54]

Moreover, the "interference study" attached to Teledesic's Petition fails to demonstrate the likelihood of objectionable interference between

---

51 *See supra* Part II(A)(1).

52 *See* Comments of Teledesic in CC Dkt. No. 92-297, at 21 (filed Sept. 7, 1995).

53 *28 GHz Order*, at ¶ 81.

54 Indeed, Teledesic continues to claim that coexistence with 18 GHz FS microwave systems is feasible in WRC-97 proceedings, even while it is taking the opposite position with the Wireless Bureau. *See supra* Part II(A)(4).

Teledesic's proposed NGSO/FSS system and DEMS systems. Rather, Teledesic's August 30 study appears to have been conducted for the sole purpose of creating an appearance of incompatibility between its proposed downlinks and DEMS systems in the 18 GHz band. Traditional frequency coordination involves site-by-site analyses and calculations that consider distance separation between transmitter and receiver, antenna directivity, polarization isolation, terrain blockage, building shielding and other interference-related system characteristics.

In contrast, Teledesic's newest study is a mere theoretical analysis that fails to consider factors such as terrain blockage, building shielding or isolation techniques, while focusing only on separation and antenna directivity. Rather than merely speculating that DEMS systems would cause harmful interference to NGSO/FSS earth stations, the parties would have to compare the actual coordinates of proposed earth station sites to proposed and existing DEMS sites and use existing terrain databases to determine where and to what extent there is a real risk of interference from the respective transmitters. Only after such a real-world analysis could a party accordingly determine whether its proposed site was acceptable or whether steps to further eliminate potential interference were necessary. That is the manner in which traditional co-primary frequency coordi-

nation processes operate and the way FS and FSS stations coexist in other frequency bands designated as co-primary.[55]

In addition, the results of Teledesic's August 30 so-called "preliminary" interference analysis are substantially different than the results of another "preliminary" interference analysis that Teledesic conducted only nine months ago.[56] In a December 8, 1995 analysis, Teledesic cited a requirement for a carrier-to-noise-plus interference ratio of 6.5 dB, which is consistent with Teledesic's link budget for its downlink that appeared in its application.[57] With this requirement, Teledesic's own analysis showed that only in the most severe rain-faded conditions at the worst-case elevation angle to the satellite was potential interference from DEMS stations even an issue. For clear air conditions, Teledesic found that its own criterion was satisfied and emissions from DEMS stations were not problematic. Moreover, even in the most severe rain-faded conditions, and even absent shielding or other methods to alleviate interference, the interference criterion was exceeded by only slightly more than one dB. These

---

55 For example, in the C-Band (4/6 GHz) the uplink (5925-6425 MHz) and downlink (3700-4200 MHz) frequencies are shared on a co-primary basis between FS and FSS services. 47 C.F.R. § 2.106.

56 *See* Attachment 3, Teledesic Letter dated December 8, 1995, at 4.

57 *See Teledesic Application*, at 144 (Appendix 4).

results reinforced Teledesic's representation in its application that it could coordinate with 18 GHz FS microwave systems.

In its August 30 study, however, Teledesic inexplicably modified the interference criterion by approximately 18 dB.[58] Although there is no apparent engineering basis for this abrupt change, Teledesic's modified requirement results in an expansion by approximately a factor of 60 the area within which Teledesic claims harmful interference from 18 GHz FS stations. This dramatic expansion of the protection area around earth stations creates a substantially more significant perceived coordination problem, which allows Teledesic more easily to claim that coordination with existing FS systems is impossible[59].

Not only does Teledesic's August 30 study rely on questionable engineering assumptions, it also makes no attempt to identify constructive solutions to the frequency coordination issues between DEMS and NGSO/FSS systems. For example, despite Teledesic's reference in its application to earth station shielding as a method of minimizing the need for coordination, it makes no mention of this technique in its August 30 study, nor does it characterize the

---

58 *See* Teledesic Study dated August 30, 1996, at 9.

59 *See* Attachment 7, Technical Review of Teledesic Interference Analysis and Assessment of the 18 GHz Sharing Situation Between DEMS and the Proposed Teledesic NGSO/FSS System (prepared September 16, 1996). A comparison of Teledesic's studies shows the interference criterion utilized in Teledesic's December 1995 study produces an "exclusion zone" that is only 1.6 percent as large as the exclusion zone produced in its August 1996 study.

real-world impact of such shielding on the coordination issue. Likewise, as noted above, Teledesic ignores other practical considerations such as terrain and foliage blockage, building shielding, and other isolation techniques such as placement of stations to avoid undesirable geometric alignments. Even though such techniques are cataloged in documentation of meetings for ITU-R Working Party 4-9S, which Teledesic cites in its September 3 letter,[60] it selectively excludes these considerations from its August 30 technical analysis. In short, its latest "study" fails to account for the real world interference mitigation techniques that are an essential part of any frequency coordination process or interference analysis.

B. Teledesic's Petition to Determine the Status of MSI's and DSC's DEMS License Should Be Denied

Teledesic wrongfully contends that both MSI and DSC have failed to construct valid DEMS systems and have failed to provide service to the public. Contrary to Teledesic's arguments, DEMS licensees may deploy point-to-point facilities in lieu of or in addition to point-to-multipoint facilities. For instance, the Commission has concluded that "narrow beam or point-to-point equipment can be used in DEMS provided it is used in a "cellular" configuration (*i.e.*, the DTS consists of nodal and user stations)."[61] This is precisely the type of system

---

60 *See* Letter dated September 3, 1996 from Scott Blake Harris to Michele Farquhar, Chief, Wireless Telecommunications Bureau.

61 Revision of Part 21 of the Commission's Rules, *Report and Order*, 2 FCC Rcd 5713, 5727 (1987).

DSC referenced in its original DEMS applications, in which MSI and DSC (and other existing DEMS licensees) have constructed. Both MSI's and DSC's respective systems have both nodal and user stations.

For the seven SMSAs in which MSI's 174 applications have been submitted, MSI is precluded from constructing additional nodal stations without first submitting applications for such additional facilities to the Commission. Therefore, Teledesic's argument is akin to claiming that Part 22 cellular licenses could not have satisfied their initial construction deadlines by building only one cell site, since a single cell site could not constitute a "cellular" configuration.[62] Many cellular licensees -- as well as many DEMS licensees[63] -- in fact used one cell site (or for DEMS, one point-to-point nodal/user station path) to satisfy their construction deadlines. The fact that DSC and MSI chose to construct a single point-to-point link as the first facility in each of their respective markets reflects nothing more than the obvious fact that there is always a first customer in every market.

---

62 Teledesic is also incorrect in implying that the rules contemplate an "omnidirectional" system. *See* Petition at 18.

63 *See, e.g.*, FCC Forms 494A filed by FirstMark Communications, Inc., File No. 9606904 for WMT306 in Los Angeles SMSA (filed June 27, 1996) and File No. 9696905 for WMT348 in the San Francisco SMSA (filed June 24, 1996); and File No. 4-CE-MP/L-89, FCC Form 435 filed by New Jersey Bell, Application for WLA223 in the Trenton SMSA (filed July 7, 1989).

With regard to the existence of those customers, Teledesic's unsubstantiated attempt to suggest that they do not exist is flatly untrue and illustrative of the desperate lengths to which Teledesic appears willing to go in its efforts to obtain a *de facto* re-allocation of the 18 GHz band. Teledesic is wrong on both the facts and the law. In the first instance, as demonstrated by the attached declarations, both DSC and MSI began serving customers on each of their respective systems consistent with the timely filing of their FCC Forms 494. Therefore, Teledesic's claim that an investigation of DSC's and MSI's operating systems should be conducted is utterly without merit.[64] In any event, Part 101 licensees generally are not required to have actual customers in order to be deemed "operational."[65] Thus, Teledesic's request for a Commission inquiry must be dismissed.

---

64 It is absurd for Teledesic to imply that Associated and DSC are merely attempting to warehouse licenses. Petition at 8-9. In addition to the resources committed to build-out and technological development described above, MSI and DSC have made significant commitments to building viable local exchange competition. Recently, Associated Communications, L.L.C. announced the appointment of Alex J. Mandl, former president and chief operating officer of AT&T, as its Chairman and Chief Executive Officer. It was only *after* this announcement that Teledesic began its attack on MSI and DSC and suddenly asserted that frequency coordination is "impossible."

65 *See* Reorganization and Revision of Parts 1, 2, 21 and 94 of the Rules to Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services, *Report and Order*, 2 Comm. Reg. (P&F) 541, 552 (1996).

IV. Conclusion

As MSI and DSC have demonstrated herein, Teledesic's Petition is nothing but a late-filed petition for reconsideration of license grants, in most cases issued over a year or two ago in connection with applications that were filed and placed on public notice up to almost three years ago. Indeed, Teledesic's Petition simply reiterates its request for the Commission to "freeze" Teledesic's pending 174 applications and all the other DEMS build-outs, which the Commission expressly refused to do in the *Freeze Order*. Teledesic raises no *bona fide* facts or legal theories under which the Commission should delay, let alone deny, grant of the pending nodal station applications or pursuant to which the Commission should investigate the construction, operation, and provision of commercial service by each of the licensed systems whose initial construction deadlines have passed. The proffered interference analysis is flawed and therefore fails to demonstrate any interference between 18 GHz NGSO/FSS and FS systems.

Teledesic's Petition is intended solely to harass and delay the construction of competitive local exchange networks. The Commission should expeditiously grant MSI's 174 above-captioned applications and dismiss

Teledesic's Petition, including its request to investigate the licensed systems of MSI and DSC.

Respectfully submitted,

Jeffrey H. Olson
Erik C. Luchs
Paul, Weiss, Rifkind, Wharton & Garrison
1615 L Street, N.W.
Washington, D.C. 20036-5694
(202) 223-7300

Counsel for
Digital Services Corporation

Antoinette Cook Bush
Jay L. Birnbaum
Jeffry A. Brueggeman
Skadden, Arps, Slate, Meagher & Flom
1440 New York Avenue, N.W.
Washington, DC 20005
(202) 371-7000

Stuart F. Feldstein
Mitchell F. Brecher
Terri B. Natoli
Fleischman and Walsh, L.L.P.
1400 16th Street, N.W.
Washington, DC 20006-1809
(202) 939-7900

Counsel for
Microwave Services, Inc.

Dated: September 16, 1996

Attachment 1

DECLARATION OF RICHARD I. GOLDSTEIN
VICE PRESIDENT OF
MICROWAVE SERVICES, INC.

Richard I. Goldstein (the "Declarant") declares the following:

1. The Declarant is a Vice President of Microwave Services, Inc. ("MSI"), a Delaware corporation, which has a business address at 200 Gateway Towers, Pittsburgh, PA 15222.

2. The Declarant further states that he has read the Consolidated Petition to Deny and Petition to Determine Status of Licenses, submitted on behalf of Teledesic Corporation on September 6, 1996 ("Petition").

3. The Declarant further states that Digital Services Corporation ("DSC") is not under common ownership or under common control with MSI. The only interest that DSC has in common with MSI is DSC's minority stake in Associated Communications, L.L.C. (formerly "DMT, L.L.C."), a joint venture with MSI. With the exception of Associated Communications, L.L.C., DSC has no ownership interests in or any control over MSI, and MSI has no ownership interests in or any control over DSC.

4. The Declarant further states that MSI was providing commercial service to, and incurring revenues from, customers in each of its two DEMS systems in the Los Angeles and San Francisco SMSAs at the time that MSI filed a Form 494A with the Federal Communications Commission regarding the construction of each such facility. MSI continues to incur revenues from customers using each of the two facilities for which it has filed a Form 494A. Further, MSI's DEMS systems, as constructed, each consist of a nodal station and a user station in accordance with the Commission's rules.

5. The Declarant further states that he has read the Joint Opposition to Consolidated Petition to Deny and Petition to Determine Status of Licenses, and that the facts stated therein are true and correct to the best of his knowledge and belief.

I declare under penalty of perjury that I have reviewed the foregoing and the facts stated therein are true and correct to the best of my knowledge and belief.

Richard I. Goldstein
Vice President
The Associated Group, Inc. and
Microwave Services, Inc.

Dated: September 16, 1996

DECLARATION OF ROY MEHTA,
VICE PRESIDENT OF OPERATIONS
OF DIGITAL SERVICES CORPORATION

Roy Mehta (the "Declarant") declares the following:

1. The Declarant is the Vice President of Operations of Digital Services Corporation ("DSC"), a Virginia corporation located at 2300 Clarendon Boulevard, Suite 800, Arlington, Virginia 22201. In that capacity, he has been actively involved in directing, on a day-to-day basis, the construction and operation of DSC's DEMS facilities, overseeing all decisions related to site acquisition for, equipment procurement for, construction of, and operation of DSC's DEMS facilities.

2. The Declarant further states that he has read the Petition to Deny and Petition to Determine Status of Licenses, submitted on behalf of Teledesic Corporation on September 6, 1996 (the "Petition").

3. The Declarant further states that -- contrary to Teledesic's speculation on page 6 of the Petition -- DSC is not under common ownership or under common control with Microwave Services, Inc. ("MSI"). The only interest that DSC has in common with MSI is DSC's minority stake in Associated Communications, L.L.C. (formerly "DMT, L.L.C."), a joint venture with MSI. With the exception of Associated Communications, L.L.C., DSC has no ownership interests in or any control over MSI, and neither MSI nor any of its affiliates have any ownership interests in or any control over DSC.

4. The Declarant further states that -- contrary to Teledesic's speculation on pages 21-22 of the Petition -- DSC was providing commercial service to, and receiving revenues from, customers at each of its twenty-five (25) DEMS facilities at the time that DSC filed a Form 494A with the Federal Communications Commission regarding the construction of each such facility. DSC continues to receive revenues from customers using each of the twenty-five (25) facilities for which it has filed a Form 494A. Further, DSC's DEMS systems, as constructed, each consist of a nodal station and a user station in accordance with the Commission's rules.

5. The Declarant further states that he has read the Joint Opposition to Consolidated Petition to Deny and Petition to Determine Status of Licenses, and that the facts stated therein are true and correct to the best of his knowledge and belief.

I declare under penalty of perjury that the foregoing is true and correct. Executed on Friday, September 13, 1996.

ROY MEHTA
Vice President of Operations,
Digital Services Corporation

Attachment 2

Timeline of DEMS and NGSO/FSS Licensing

1988

FCC grants New Jersey Bell DEMS licenses

1993

June, November, December 1993:
MSI, DSC, and **FirstMark** file initial DEMS applications

June, October, December 1993:
DSC and **FirstMark** initial DEMS applications on Public Notice

1994

March 1994:
Teledesic files NGSO/FSS application including representation that its NGSO/FSS system is compatible with 18 GHz users

April, August, & November 1994:
MSI initial DEMS applications on Public Notice

1995

January, May & August 1995:
FCC grants 9 DEMS licenses to **MSI**, 25 DEMS licenses to **DSC**, and 2 DEMS licenses to **FirstMark**

July 1995: FCC releases *28 GHz NPRM*

November 1995: WRC-95 designation of NGSO/FSS spectrum

1996

January and February 1996: FCC grants 18 DEMS licenses to **MSI** and 1 DEMS license to **DSC**

June & July 1996:
- **MSI, DSC & FirstMark** complete construction in initial DEMS markets
- **Associated Communications, L.L.C.** applies for DEMS licenses in approximately 66 additional SMSAs (no longer subject to petitions to deny)

1997

July 1996:
- FCC's *28 GHz Order* designates 18 GHz NGSO/FSS band on co-primary basis with DEMS and point-to-point microwave
- **MSI** files 174 additional nodal site applications for 7 of its licensed SMSAs previously granted in May 1995

August 30, 1996:
Teledesic prepares study claiming its NGSO/FSS system is incompatible with 18 GHz DEMS